

properties)
IT 330649-45-1P 330649-55-3P 330649-56-4P
330649-57-5P
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(glucose sensing mols. having selected fluorescent properties)
IT 330671-17-5P
RL: ARG (Analytical reagent use); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(glucose sensing mols. having selected fluorescent properties)
IT 391634-52-9P 391634-53-0P
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(glucose sensing mols. having selected fluorescent properties)
IT 16419-60-6, o-Tolylboronic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(glucose sensing mols. having selected fluorescent properties)
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> sel hit rn 110;sel hit rn 114
E1 THROUGH E16 ASSIGNED

E17 THROUGH E58 ASSIGNED

=> file reg

FILE 'REGISTRY' ENTERED AT 15:15:35 ON 13 NOV 2002
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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 11 NOV 2002 HIGHEST RN 473219-67-9
DICTIONARY FILE UPDATES: 11 NOV 2002 HIGHEST RN 473219-67-9

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> d his 115-

STEREO ATTRIBUTES: NONE

L3 4762 SEA FILE=REGISTRY SSS FUL L1
 L4 6339 SEA FILE=REGISTRY ABB=ON PLU=ON INSULIN/BI
 L6 7035 SEA FILE=HCAPLUS ABB=ON PLU=ON L3
 L7 151788 SEA FILE=HCAPLUS ABB=ON PLU=ON L4 OR INSULIN?
 L9 129 SEA FILE=HCAPLUS ABB=ON PLU=ON L6 AND L7
 L10 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L9 AND CONJUGAT?

=> d ibib abs hitrn l10 tot

L10 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1994:517466 HCAPLUS

DOCUMENT NUMBER: 121:117466

TITLE: Preparation and characterization of a
 glucose-responsive **insulin**-releasing polymer
 device

AUTHOR(S): Shiino, Daijiro; Murata, Yoshishige; Kataoka,
 Kazunori; Koyama, Yoshiyuki; Yokoyama, Masayuki;
 Okano, Teruo; Sakurai, Yasuhisa

CORPORATE SOURCE: Int. Cent. Biomater. Sci., Noda., 278, Japan

SOURCE: Biomaterials (1994), 15(2), 121-8

CODEN: BIMADU; ISSN: 0142-9612

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A new glucose-responsive **insulin** delivery system composed of
 phenylboronic acid (PBA) groups was prepd. and investigated. Complexation
 of various diol-contg. mols. with PBA gel beads was evaluated using
 frontal chromatog. The structural features of the diol-contg. mols.
 strongly influenced their binding to PBA gels beads. In particular,
 open-chain monosaccharides demonstrated higher assocn. consts. (ca 9.5
 .times. 102 to 5.1 .times. 103 l/mol) than glucose (ca 6.3 .times. 102
 l/mol). Furthermore, a model system utilizing a fluorescent deriv. of
 tris(hydroxymethyl)aminomethane was synthesized and bound to PBa gel
 beads. The mols. were released in a pulsatile manner in response to
 glucose. In addn., gluconic acids were chem. attached to **insulin**
 mols. The modified **insulin**, contg. two gluconic acid units per
insulin mol., was isolated using ion-exchange chromatog. This
 gluconic acid-modified **insulin** (G-Ins) was bound onto a PBA gel
 column, and the G-Ins release profile in response to varying glucose
 concns. was investigated. The results demonstrate that the PBA gel beads
 release G-Ins in response to glucose concn. Thus, this new system may be
 applied for self-regulated **insulin** delivery.

IT 66472-86-4

RL: RCT (Reactant); RACT (Reactant or reagent)
 (acylation of, with methacrylic acid)

IT 9004-10-8, **Insulin**, biological studies

RL: BIOL (Biological study)
 (glucose-responsive releasing device for, phenylboronic acid-contg.
 polymer beads as)

IT 48150-45-4P

RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. of)

IT 9004-10-8DP, **Insulin**, **conjugates** with gluconic
 acid

RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. of, for binding to phenylboronic acid-contg. polymer beads for
 glucose-responsive **insulin**-releasing device)

IT 136043-29-3P

RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn. of, for glucose-responsive **insulin**-releasing device)

L10 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1991:542250 HCAPLUS

DOCUMENT NUMBER: 115:142250

TITLE: Boronic acid-containing polymer complexes for treatment of sugar-related diseases

INVENTOR(S): Miyazaki, Tsuyoshi; Murata, Yoshishige; Shiino, Daijiro; Waki, Kazunori; Sakurai, Yasuhisa; Okano, Teruo; Kataoka, Kazunori; Koyama, Yoshiyuki; Yokoyama, Masayuki; Kitano, Shigeru

PATENT ASSIGNEE(S): Nippon Oil and Fats Co., Ltd., Japan

SOURCE: Eur. Pat. Appl., 20 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 424168	A1	19910424	EP 1990-311485	19901019
EP 424168	B1	19930901		
R: BE, CH, DE, DK, FR, GB, IT, LI, NL, SE				
JP 04124145	A2	19920424	JP 1990-241191	19900913
JP 2874309	B2	19990324		
JP 04124144	A2	19920424	JP 1990-241192	19900913
JP 3087293	B2	20000911		
JP 2000086534	A2	20000328	JP 1999-297752	19900913
JP 03204823	A2	19910906	JP 1990-275441	19901016
JP 3018463	B2	20000313		
CA 2027930	AA	19910420	CA 1990-2027930	19901018
CA 2027930	C	19980630		
AU 9064754	A1	19910711	AU 1990-64754	19901018
AU 628674	B2	19920917		
US 5478575	A	19951226	US 1993-37383	19930326

PRIORITY APPLN. INFO.:

JP 1989-270215	A	19891019
JP 1990-241191	A	19900913
JP 1990-241192	A	19900913
US 1990-599718	B1	19901019

AB A polymer complex of a sugar response type comprises boronic acid groups linked to medicines contg. hydroxy groups. The complex may also comprise polymers having boronic acid groups and polymers having hydroxy groups which are crosslinked. Matrex PBA-30 (benzeneboronic acid-crosslinked agarose gel) was treated with glucosylated **insulin** to give an agent for treatment of diabetes.

IT 48150-45-4DP, reaction products with vinyl acetal polymers and acrylamide 136043-32-8P 136043-33-9P

136043-36-2P 136043-37-3P 136043-38-4P

136162-11-3P 136162-12-4P 136292-61-0P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(prepn. and reaction of, with hydroxy-contg. medicines)

IT 9004-10-8DP, **Insulin**, derivs., **conjugates** with aminobenzeneboronic acid-contg. polymers 11070-73-8DP, **Insulin** (ox), reaction products with aminobenzeneboronic acid-contg. polymers 136043-29-3DP, **conjugates** with isoproterenol 136043-30-6DP, **conjugates** with **insulin** derivs. 136043-35-1DP, reaction products with **insulin** 136161-94-9DP, **conjugates** with

insulin derivs.

RL: PREP (Preparation)

(prepn. of, for treatment of sugar-related diseases)

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L1          STR
L3          4762 SEA FILE=REGISTRY SSS FUL L1
L4          6339 SEA FILE=REGISTRY ABB=ON  PLU=ON  INSULIN/BI
L5          19786 SEA FILE=REGISTRY ABB=ON  PLU=ON  GLUCOSE/BI
L6          7035 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L3
L7          151788 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L4 OR INSULIN?
L8          411053 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L5 OR GLUCOSE
L9          129 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L6 AND L7
L10         2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L9 AND CONJUGAT?
L12         80 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L6 (L)L8
L13         3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L12 AND CONJUGAT?
L14         2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L13 NOT L10

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=> d ibib abs hitrn l14 tot

L14 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2002:449993 HCAPLUS

DOCUMENT NUMBER: 137:30199

TITLE: Optical determination of glucose utilizing boronic acid adducts

INVENTOR(S): Singaram, Bakthan; Wessling, Ritchie A.

PATENT ASSIGNEE(S): The Regents of the University of California, USA

SOURCE: PCT Int. Appl., 103 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002046752	A2	20020613	WO 2001-US46658	20011205
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2002020230	A5	20020618	AU 2002-20230	20011205
PRIORITY APPLN. INFO.:			US 2000-731323	A2 20001205
			WO 2001-US46658	W 20011205

OTHER SOURCE(S): MARPAT 137:30199

AB The present invention concerns an improved optical method and optical sensing device for detg. the levels of polyhydroxyl-substituted org. mols. in vitro and/or in vivo in aq. media. In particular, a sensory devise is implemented in a mammal to det. sugar levels. Specifically, a dye is combined with a **conjugated** nitrogen-contg. heterocyclic arom. boronic acid-substituted bis-onium compd. in the presence of a sugar, such as fructose or glucose. The viologens are preferred as the arom. **conjugated** nitrogen-contg. boronic acid substituted compds. The

method is useful to det. sugar levels in a human being. Diagrams describing the app. assembly and operation are given.

- IT 436853-53-1 436853-54-2 436853-55-3
436853-56-4 436853-57-5 436853-58-6
436853-61-1 436853-62-2 436859-89-1
436859-90-4
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); USES (Uses)
(optical detn. of **glucose** utilizing boronic acid adducts)
- IT 420816-02-0P 436853-29-1P 436853-30-4P
436853-31-5P 436853-32-6P 436853-48-4P
436853-49-5P 436853-67-7P
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(optical detn. of **glucose** utilizing boronic acid adducts)
- IT 436853-68-8 436853-69-9
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(optical detn. of **glucose** utilizing boronic acid adducts)
- IT 436853-37-1P
RL: ARU (Analytical role, unclassified); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)
(optical detn. of **glucose** utilizing boronic acid adducts)
- IT 436853-38-2P
RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)
(optical detn. of **glucose** utilizing boronic acid adducts)
- IT 436853-52-0P
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(optical detn. of **glucose** utilizing boronic acid adducts)
- IT 436853-64-4P
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(optical detn. of **glucose** utilizing boronic acid adducts)
- IT 436853-42-8P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(optical detn. of **glucose** utilizing boronic acid adducts)
- IT 436853-51-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(optical detn. of **glucose** utilizing boronic acid adducts)
- IT 436853-33-7P 436853-40-6P 436853-41-7P
436853-47-3P 436853-50-8P 436853-66-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(optical detn. of **glucose** utilizing boronic acid adducts)

L14 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:208511 HCAPLUS

DOCUMENT NUMBER: 134:234017

TITLE: Glucose sensing molecules having selected fluorescent properties

INVENTOR(S): Satcher, Joe H., Jr.; Lane, Stephen M.; Darrow, Christopher B.; Cary, Douglas R.; Tran, Joe Anh
PATENT ASSIGNEE(S): The Regents of the University of California, USA; Minimed Inc.

SOURCE: PCT Int. Appl., 95 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 8

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001020334	A1	20010322	WO 2000-US25295	20000915
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1214596	A1	20020619	EP 2000-965032	20000915
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL				
US 2002043651	A1	20020418	US 2001-826745	20010404
PRIORITY APPLN. INFO.:				
			US 1999-154103P	P 19990915
			US 1995-410775	A 19950327
			US 1995-7515P	P 19951122
			US 1996-749366	A 19961121
			US 1996-752945	A 19961121
			US 1999-78392	A 19991121
			US 1999-461627	A 19991214
			US 2000-194571P	P 20000404
			US 2000-663567	A 20000915
			WO 2000-US25295	W 20000915

OTHER SOURCE(S): MARPAT 134:234017

AB An analyte sensing fluorescent mol. that employs intramol. electron transfer is designed to exhibit selected fluorescent properties in the presence of analytes such as saccharides. The selected fluorescent properties include excitation wavelength, emission wavelength, fluorescence lifetime, quantum yield, photostability, soly., and temp. or pH sensitivity. The compd. comprises an aryl or a substituted Ph boronic acid that acts as a substrate recognition component, a fluorescence switch component, and a fluorophore. The fluorophore and switch component are selected such that the value of the free energy for electron transfer is less than about 3.0 kcal mol⁻¹. Fluorescent compds. are described that are excited at wavelengths greater than 400 nm and emit at wavelengths greater than 450 nm, which is advantageous for optical transmission through skin. The fluorophore is typically selected from transition metal-ligand complexes and thiazine, oxazine, oxazone, or oxazine-one as well as anthracene compds. The fluorescent compd. can be immobilized in a glucose permeable biocompatible polymer matrix that is implantable below the skin.

IT **98-80-6D**, Phenyl boronic acid, substituted
 RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
 (as substrate recognition component of sensing mol.; **glucose** sensing mols. having selected fluorescent properties)

IT **330649-58-6P**
 RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 (**glucose** sensing mols. having selected fluorescent